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REMARKS

Claims 4-7 and 15-18 are pending in the application. Claims 4, 12 and 17 have been amended herein. Claims 1-3, 8-14 and 19-22 have been canceled. Favorable reconsideration of the application, as amended, is respectfully requested.

Claims 4 and 15 have been amended to independent form. Claim 17 has been amended to correct a typographical error. No new matter has been added.

I. OBJECTION TO CLAIM 22

Claim 22 has been objected to as including a typographical error. In view of the cancellation of claim 22, such objection is now believed to be moot.

II. REJECTION OF CLAIMS 4, ~~8,~~ 15 AND ~~19~~ UNDER 35 USC §103(a)

Claims 4, 8, 15 and 19 stand rejected under 35 USC §103(a) based on *Applicants' Admitted Prior Art (AAPA)* in view of *Lin '789* in further view of *Fertner '642* and *Tice '456.* This rejection is respectfully traversed for at least the following reasons.[1]

The present invention relates to an apparatus and method for providing a network receiver capable of low-cost, precision reception of network data. As is discussed in the present application, a problem associated with conventional receivers is that the coefficient calculation circuitry needed for calculating filter coefficients within the short duration of time of a training sequence can require upward of 2.7 billion operations per second. This requires large and high-speed signal processing circuits that consume substantial power. Consequently, such circuits are not practical for use in battery-powered devices which have a limited power capacity. Further, large and high-

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[1]Applicants acknowledge the rejection of claims 1, 2, 12 and 13 under 35 USC §103(a) based on AAPA in view of Lin together with the rejection of claim 3 and 14 under 35 USC §103(a) based on AAPA in view of Lin in further view of Fertner. In view of the incorporation of the features of these claims into claims 4 and 15, such rejections will be addressed in connection with claims 4 and 15.

speed circuits are typically expensive making them unsuitable for inexpensive consumer network devices such as smoke detectors, door openers, and other devices requiring inexpensive network access.

The present invention provides an apparatus and method for determining coefficient values efficiently and effectively that does not suffer the disadvantages of larger, more costly, and more powerful circuitry of conventional systems.

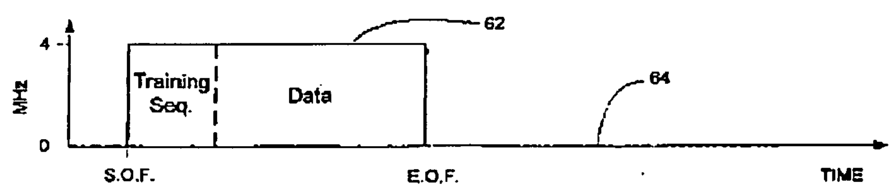

FIG. 3a

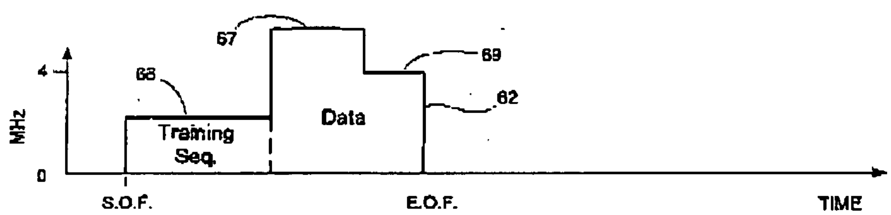

FIG. 3b

Figs. 3a and 3b of Present Application

Figs. 3a and 3b of the present application (reproduced above) perhaps best illustrate a feature of the invention which allows lower cost, precision reception of network data. Fig. 3a represents the frame of data progressing into a sample management buffer in accordance with the invention at a constant rate. Fig. 3b, on the other hand, represents the manner in which the present invention outputs the data from the sample management buffer at a rate which is slower than the rate at which the data is input into the sample management buffer. This allows the receiver circuitry more time during the training sequence to train the filter coefficients. As a result, less

computation intensive circuitry is needed, and the receiver may be made of lower cost hardware. Moreover, once the filter has been trained, the rate at which the data is output from the sample management buffer is then increased such that overall no time is lost in the processing of the data, even though the training sequence had been extended.

Claim 4 (as amended, recites how the buffer circuit releases samples at a slower sampling rate during a training sequence of the frame of data, and releases samples at a faster data rate during a data portion of the frame of data. Claim 15 similarly recites releasing samples during a training sequence at a slower rate than the rate at which samples are released during a data portion of the frame of data.) The cited art, whether taken alone or in combination, does not teach or suggest such operation.

The Examiner admits that *AAPA*, *Lin* and *Fertner* do not teach varying the sampling rate depending on the training sequence of the frame or the data portion of the frame. (O.A., p. 5). However, the Examiner contends that *Tice* teaches that it would have been obvious to modify *AAPA*, *Lin* and *Fertner* so as to result in the claimed invention. Applicants respectfully disagree for at least the following reasons.

Tice describes a detector with a variable sample rate. Outputs from a sensor are sampled at a predetermined rate when the outputs do not represent an alarm condition. (The outputs are analyzed using pattern recognition techniques to determine if a predetermined profile, which precedes the presence of an alarm condition, is present. In the event that the profile is detected, the sample rate is increased along with associated sample value processing.)

Applicants agree with the Examiner that *Tice* teaches a detector with a variable sample rate. However, claims 4 and 15 do not relate to a variable sample rate. Rather, claims 4 and 15 relate to a device/method in which received data is sampled at a first rate (which needn't be variable), but is released from a buffer at a rate which is different from the sampling rate.

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Furthermore, *Tice* does not teach or suggest adjusting the sampling rate based on the training sequence of the frame of data versus the data portion of the frame of data. As is discussed above, claims 4 and 15 recite releasing samples from the buffer circuit at a rate which is slower than the received data sampling rate during the training sequence in order to provide the receiver more time to determine the filter coefficients. The invention then increases the rate at which samples are released from the buffer circuit in order to process the data portion of the data frame.

Tice does not teach or suggest releasing samples from a buffer circuit as a slower rate during a training sequence of the frame of data. Rather, *Tice* teaches attempting to detect a predetermined profile indicative of an alarm condition. If the alarm condition is detected, the sampling frequency is increased.

As will be appreciated by those having ordinary skill in the art, the detection of a predetermined alarm profile has nothing whatsoever to do with training a filter by determining appropriate coefficients as recited in claims 4 and 15. One can only assume in *Tice* that any filters have already been trained, or that the sampling rate in *Tice* is altered independent of a training portion of a frame of data.

Regarding any lack of criticality, applicants wish to point out that it is very critical that the training portion of the data frame is received at one frequency and the data portion is received at another frequency as set forth in claims 4 and 15. This allows less expensive hardware to still be able to receive and process a data frame without necessarily slowing down the entire network data rate as discussed above.

In other words, not even *Tice* teaches or suggests the operation recited in claims 4 and 15. Therefore, none of the references, whether taken alone or in combination,

teach or suggest the invention as recited in claims 4 and 15.[2] Withdrawal of the rejection is therefore respectfully requested.

Furthermore, claims 4 and 15 recite the feature that the samples are released at a faster data rate, which is *faster* than the first data rate, during the data portion of the frame of data. (See, e.g., the peak data rate 67 shown in Fig. 3b). *Tice* does not teach or suggest such an increased data rate beyond the increased rate following recognition of the predetermined pattern. Thus, claims 4 and 15 may be even further distinguished.

Therefore, again withdrawal of the rejection is respectfully requested.

III. REMAINING REJECTIONS

Claims 5-6, 9-10, 16-17, 20-21 together with 7, 11, 18 and 22 stand rejected based on *AAPA*, *Lin*, *Fertner* and *Tice*, further in view of *Liu et al.* and *Duan*. As the remaining claims are dependent from either claim 4 or claim 15, the claims may be distinguished for at least the reasons stated above. Liu et al. and Duan do not make up for the above-discussed deficiencies. Withdrawal of the rejections is respectfully requested.

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[2] Applicants note that while *Tice* does discuss changing the *type* of filtering with the sampling rate (e.g., Col. 2, lns. 41-48), *Tice* does not teach or suggest changing the sampling rate in association with whether a filter is being trained versus is filtering the data portion of the frame.

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IV. CONCLUSION

Accordingly, all claims are believed to be allowable and the application is believed to be in condition for allowance. A prompt action to such end is earnestly solicited.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Should a petition for an extension of time be necessary for the timely reply to the outstanding Office Action (or if such a petition has been made and an additional extension is necessary), petition is hereby made and the Commissioner is authorized to charge any fees (including additional claim fees) to Deposit Account No. 18-0988.

Respectfully submitted,

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DATE: May 3, 2004

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